



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/561,347

12/19/2005

Louis W. Lherbier

0008-CA323US

5974

110

7590

04/06/2007

DANN, DORFMAN, HERRELL & SKILLMAN

1601 MARKET STREET

SUITE 2400

PHILADELPHIA, PA 19103-2307

EXAMINER

MAI, NGOCLAN THI

ART UNIT

PAPER NUMBER

1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/561,347

Applicant(s)

LHERBIER ET AL.

Examiner

Ngoclan T. Mai

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Art Unit: 1742

DETAILED ACTION

1. Preliminary amendment filed 12/19/05 to the specification has been entered.

Currently, claims 1-10 are pending.

Specification

2. The disclosure is objected to because of the following informalities: on page 6, line 10 pressure expressed in force or weight is incorrect.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of pressure in weight as "tons" is indefinite because pressure is generally expressed as force per unit of area. It's not clear as to the unit of area in the instant claim. Claims 4 and 9 are indefinite such that no art rejection is possible.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be

Art Unit: 1742

patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2-3 and 5 are rejected under 35 U.S.C. 102(b) as being unpatentable over Larsson (U.S. Patent No. 4,389,362, cited by the examiner) in view of Hasseltrom (U.S. Patent No. 4,723,999).

Larsson discloses a method manufacturing billets of complicated shape, wherein the method comprises:

placing metal powder in a first **metal** capsule having the shape of the desired article and size which allows for suitable decrease in volume when pressing the powder into solid body (col. 1, l. 40-44),

placing the first capsule in a second larger capsule (col. 1, l. 44-47), and surrounded on all its sides by a medium (col. 1, l. 47-49), wherein the medium is viscous at the compression temperature, and

heating the second capsule and its content to a temperature at which the powder grains within the first capsule may be bonded under pressure (col. 1, l. 50-52) and compacting the second capsule and its content (col. 1, l. 53-56).

Larsson teaches that the medium in the second vessel can be salt, metal or a species of **glass** having melting temperature or a softening temperature at or below the compacting temperature (col. 1, l. 65-68). Larsson therefore teaches heating of the second capsule and its content to melt the pressure transmitting medium.

Larsson differs from claim 1 in that there is no teaching of (1) preparing metal powder by gas atomization, (2) the material making up the second capsule, and (3) there is no teaching of compacting the metal second vessel and its content under sufficient pressure

Art Unit: 1742

to partially consolidate the metal powder so as to retain a desired amount of porosity therein.

As for (1) and (2) above, Hasselstrom teaches in a same field endeavor discloses a method for manufacturing metal billet of complicated shape employing glass as a pressure medium, wherein metal powder used is formed by gas atomization and the outer crucible, i.e., corresponding to applicant's second capsule, can be made of metal, graphite or ceramic, col. 3, l. 39-43 and col. 2, l. 34-35.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the metal powder of Larsson by atomization and employing second capsule made of metal as atomized metal powder and metal capsule are known to be used for such process taught by Hasselstrom.

As for (3) above, the process of Larsson appears to produce product with fully or substantially full the theoretical density, which reads on the claimed "a desired porosity", which includes zero porosity, i.e., 100% dense. Nonetheless, it is commonly known in the art that the density or porosity of a product can be controlled by the size and shape of the powder, compacting pressure, compacting temperature and/or time. Therefore it would have been obvious to one of ordinary skill in the art to vary the process conditions of Larsson to obtain the desired density of porosity.

As for claims 2-3, Larsson teaches the metal powder can be high-speed tool steel and the compacting temperature is ranging from 1050° – 1100°C (~1922° - 2012°F), col. 2, l. 2-
As for claim 5, While Larsson does not specifically teach screening the metal powder to provide a powder particle size that is appropriate for the type of the product for which the metal tool will be used, however screening is a conventional and well known technique in

Art Unit: 1742

the art to obtain the desired powder size. Therefore it is a routine for a practitioner when making a product having a desired density or porosity to control the particle size by screening. To employing such step in the process of Larsson would have been obvious to one skilled in the art.

6. Claims 6-8 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,389,362, now Larsson in view of U.S. Patent No. 4,723,999, now Hasseltrom and U.S. Patent No. 4,063,940, now Dain et al.

Larsson in view of Hasseltrom discloses the method for making billets of complicated shape as stated in paragraph number 5 above. The difference between Larsson in view of Hasseltrom and claim 6 is that there is no teaching of making composite metal, wherein a piece of a fully consolidated metal is placed in a metal container before filling the metal container with metal powder.

Dain et al. teaches a method for making article from metallic powder, wherein when a composite article is to be made, a powder of a first composition may be introduced into a compressible mold around a metallic insert of a second composition, which can be formed of metal powder, and the mold is subjected to compaction and sintering to bond the surrounding powder metallurgically to the insert, col. 4, l. 15-26. Therefore it would have been obvious for those versed in the art to introduce such modifications to the construction and production metallic article of Larsson in view of Hasseltrom should composite metal body be intended.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

n.m.

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700